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EXAMINER	
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ART UNIT	PAPER NUMBER
2634	4

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/186,977	ARMISTEAD, R. ASHBY	
	Examiner	Art Unit	
	Edith M Yeh	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments/Remarks

1. Applicant's remarks filed 02/18/2003 have been fully considered but they are not persuasive.

2. Regarding claims 1, 14, 19, & 28, the switch card anticipated by Atkinson et al. (US 6381239 B1) is an individually self-contained switch to process calls and includes a motherboard having daughter cards for lines, trunks, and digital signal processing (DSP) resources (column 15 line 23-column 16 line 25), wherein data transformation for one or more data connections (T1/E1, DS0, ISDN, etc.) provided. It is a data-handling resource ***as cited in these claims***. The ROMs and RAMs of the switch card (FIG.2) in Atkinson et al. contain information required for call processing (column 18 lines 4-5) and details about the lines, trunks or other facility interfaced by that card (column 18 lines 23-30), and the stored information, e.g. line/trunk information database (column 21 lines 29-35), can be in one place or distributed (column 18 lines 31-37, column 1 line 47-column 2 line 3). The stored information as the internal state information is the data transformation and communication information ***cited in the claims***.

Regarding claim 1, Atkinson et al. teaches to direct the data from the first connection to the second data-handling resource (rear card/relay substitution card, column 9 line 61-column 10 line18) when the data from the first data connection should no longer be directed to the first resource (front card, column 9 lines 18-23) without loss of connection ***as cited in the claims***.

3. Regarding claims 22-24 Atkinson et al. teaches the system is a modem/multiple-modem system (column 1 lines 21-31) ***as cited in the claims***.

4. Regarding claims 25 & 27, Fadavi (US 6067317) discloses the "internal state configuration" (DATA PUMP 16 comprising Signal Processor & CODEC, 30 FIG.2) and "external state-saving subsystem" (subsystems other than the DATA PUMP e.g. 25, FIG.2, column 5 lines 51-60) where e.g. MMI as external state-saving subsystem. Fadavi discloses all subject matter ***cited in the claims***. The claim must be given their broadest reasonable interpretation and the words of the claim must be given their "plain meaning" unless they are defined in the specification (MPEP 2111).

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action (Paper No. 2).

6. Claims 1, 2, 5-16, 19-20, & 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Atkinson et al. (U.S. 6381239 B1).

Regarding claims 1, 28, &30, Atkinson et al. teach a data communication interface and its methods, the switching platform (Abstract), comprising: a data bus (as described in column 6 line 16 and shown in 1 Figure 1); two data-handling resources, such as one card 2 (switch card) in the front portion i.e., the right most midplane side in FIG.1 (column 9 lines 18-20) and one card in the lower rear portion i.e., leftmost midplane side in FIG.1 as the spare card of its associated front card 2 (column 9 lines 61-column 10 line 4) the data-handling resource receives multiple connections (11 FIG.2), and connect to the bus (column 6 line 16, & FIG.1); the internal state information (such as the status of multiple connections: links & trunks) of the data-handling resource can be kept in RAM of the resource (column 18 lines 23-30, 122 & 126 FIG. 2); a

resource internal state memory, which is the memory in the database card (column 21 lines 13-35) where the state information of data-handling resources saved/retrieved via the database functions (column 21 lines 16-25); a resource controller, as in the hot-standby option of fault tolerance taught by Atkinson et al. in column 23 lines 53-58 & column 24 lines 9-11, can be implemented in card 4 (such as the protocols for OAM&P or resource management, column 22 lines 18-33) with the resources in card 3 (such as the alarm reports, column 21 lines 20-25) monitoring the resources and responding to conditions (failure/removal) to direct/transfer the data connection from the active handing resource to the other data-handling resource (column 10 lines 4-13) by restoring/loading the internal state information of the original designated data-handling resource without interrupting the connection (column 24 lines 15-17). where the N+1 redundancy the N is 1.

Regarding claims 2 & 5, Atkinson et al. teach the first data-handling resource (the front card) comprises a first digital signal processor residing on a first card (column 15 lines 37-39), and the second data-handling resource (as the spare card, column 8 lines 52-62) having the same structure of the first resource (column 10 lines 28-30), comprises a second digital signal process residing on a second card sharing a common bus (FIG.1).

Regarding claims 6 & 7, Atkinson et al. teach the resource controller (card 3) with the state memory (card 4) reside on a third card. The card 3 (or 4) with in the interface where the functions of card 3 and card 4 can be combined in one card (column 10 lines 37-40) is the third card.

Regarding claim 8, Atkinson et al. teach the first and the second data-handling resources, each comprises a circuit card (card 2) with multiple digital signal processors (TI320C54s in 13 FIG.1, column 17 lines 21-29).

Regarding claim 9, Atkinson et al. teach a card internal state memory (RAMs 122 & 126 in Figure 2) to save internal state information such as connection status (column 17 lines column 18 lines 23-30) from the DSPs in the card (column 15 lines 37-39).

Regarding claim 10 & 11, Atkinson et al. teach the handling resources can receive multiple simultaneous data connections (11 FIG.2, column 15 lines 41-47) and the first resource can transfer all or selected connections to the other (column 10 lines 4-18).

Regarding claims 12 & 13, Atkinson et al. teach the (fault/failure) conditions comprise a failure of the first resource as the N+1 redundancy when N equals 1 and the first resource is removed/substituted (column 10 lines 4-18).

Regarding claim 14, the rejection is the same as the rejection of claim 1, Atkinson et al. teach N+1 data-handling resources, as the cards shown in Fig.1 and taught in column 9 lines 59-coulmn 10 line 1, for N>1 (column 10 line 11-13), and assign the N+1th resource card as the spare card (the lower rear card) to replace any of the first N cards.

Regarding claim 15, Atkinson et al. teach one spare card can be assigned as the N+1th resource that only assigned to the first data connection. The first connection assigned can be realized by assigning the time slot in TDM data buses to a resource that is a port (column 14 lines 46-52), and a certain kind of the daughter card (where lines, trunks, or PCM resources reside, column 15 lines 37-39, column 16 lines 26-28, & lines 58-61) included in the motherboard of the resource.

Regarding claim 16, Atkinson et al. teach the state information of the N+ 1 data-handling resources can be saved/retrieved by more than one of the resources via the database functions (column 21 lines 16-25, column 29-35) that can manage the multiple saves and retrievals.

Regarding claim 19, Atkinson et al. teach in a data communication interface each resource (front card) can have one spare card (lower rear card) associated (column 9 lines 61- column 10 line 1), all connected to the bus (column 6 line 16, column 10 lines 59-62, FIG.1). The data communication interface has N resources (N front cards) as the first N resources and another N resources (N spare cards) as the second N resources where N>1. When the resource controller responds conditions (fault/failure) the connection is transferred from one of the N first resources (front cards) to another one of the second N resources (spare cards) (column 9 lines 61- column 10 line 18). The resource internal state memory, which is the memory in the database card (column 21 lines 13-35) where the state information of data-handling resources saved/retrieved via the database functions (column 21 lines 16-25); a resource controller, as in the hot-standby option of fault tolerance taught by Atkinson et al. in column 23 lines 53-58 & column 24 lines 9-11, can be implemented in card 4 (such as the protocols for OAM&P, column 22 lines 21-28) with the resources in card 3 (such as the alarm reports, column 21 lines 20-25).

Regarding claim 20, Atkinson et al. disclose that the connection is dropped if there is a failure and no substitutions to provide (column 24 lines 12-18) that is no spare resource available to be assigned to handle the connection, or the all resources are busy there is no extra resource provide to the port for connection (column 2 line 59- column 3 line 4).

Regarding claim 29, Atkinson et al. teach the second resource (the relay substitution card) having redundant resources (a pair microcomputers, and buses 9A & 9B, column 10 lines 16-25).

7. Claims 25-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Fadavi-Ardekani et al. (U.S. Patent 6067317).

Regarding claim 25, Fadavi-Ardekani et al. teach a modem comprising the internal state configuration (data dump FIG.2), and the external state-saving subsystem (controller and resource port, 12 & 10 FIG.2) that communicates the internal state configuration to a device (DTE) external the modem (column 3 lines 55-64).

Regarding claim 26, Fadavi-Ardekani et al. teach a modem comprising an external state-loading subsystem (12,16,25,27-29 FIG.2) that provides the configuration states of the modem which can be access (read from and write to, column 2 lines 57-62, column 3 lines 38-48, & column 4 lines 58-62) by external device so the pre-existing data connection can be transferred to another modem via the DTE (column 4 lines 4-6, column 5 lines 44-49).

Regarding claim 27, Fadavi-Ardekani et al. teach a modem comprising the internal state configuration (data dump FIG.2), and external state-loading subsystem (12,16,25,27-29 FIG.2) that provides the configuration states of the modem which can be access (read from and write to, column 2 lines 57-62, column 3 lines 38-48, & column 4 lines 58-62) by external device so the pre-existing data connection can be transferred to another modem via the DTE (column 4 lines 4-6, column 5 lines 44-49).

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action (Paper No. 2).

9. Claims 3-4, 17-18, & 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson et al. (U.S. 6381239 B1) in view of Browning et al. (U.S. SIR H1814).

Regarding claim 3, Atkinson et al. don not specify the two DSPs residing on a circuit card. Browning et al. teach the first DSP (58 FIG.5) of the first resources (Telephone Support Module TSM, 18 FIG.2), and the second DSP of the second resource residing on a circuit card (two 18s in FIG.2). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have two resources implemented in APP PROC (2 FIG.1 of Atkinson et al.) in one card taught by Browning et al. for a preferable design to achieve hardware cost effectiveness.

Regarding claim 4, inherits the limitation of claim 3, Atkinson et al. teach the functions of card 3 & 4 where the resources controller and the state memory reside, can be combined and implemented in one card (column 10, lines 37-40), but not specify they can be with the resource in the one card. Browning et al. teach that multiple modules can be in one card (column 4 lines 47-50). At the time of the invention, it would have been obvious to one of ordinary skill in the art to implement the functions of the Atkinson et al.'s card 3 & 4 in one of the module such as the Signal Processing Module (SPM 22 FIG.1) in one card with the resources (TSM 18 FIG.1), and have this card in Atkinson et al's platform. Via Browning's TDM structure, and IM (20 & 27 FIG.1) to handle the connection functions in the Atkinson et al's platform. This arrangement will have the controller and memory residing on a common card with resources to reduce hardware cost and increase the communication efficiency between modules.

Regarding claim 17, Atkinson et al. do not specify the data-handling resource can emulate a modem. Browning et al. teach the resources (TSP 18 FIG.1 & 5) can be a modem (column 13 lines 56-59). At the time of the invention, it would have been obvious to one of ordinary skill in the art to implement the Atkinson et al.'s resource using the Browning et al.'s teaching to have one resource emulates the modem to have the Atkinson et al.'s multiple application switching platform with adopting the open architecture to have the modem emulated in the resource as an enhanced modem switching system (Atkinson et al. column 1 lines 22-27, column 6 lines 6-11).

Regarding claim 18, Atkinson et al. do not specify the voice codec in the resources. Browning et al. teach the resource processor can be DTMF decoder, MFR1/2 transcoder (column 12 lines 45-50). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have one of the resource emulating the voice codec in Atkinson et al.'s resource so that in Atkinson et al.'s multiple application switch platform having the voice codec as one of the multiple applications to provide voice/tone processing.

Regarding claim 22, Atkinson et al. teach all subject matter claimed except the detail of the multiple modem resources. Browning et al. teach a Telephone Support Module (TSM 18 FIG.1) connected to a TDM bus (column 10 lines 38-46, 25 FIG.1) and a modem can be implemented in TSM (column 13, lines 55-59). At the time of the invention, it would have been obvious to one of ordinary skill in the art to implement the TSM (FIG.5) in the APP PROC on the Atkinson et al.'s switch card with modem realized in DSPs taught by Browning et al. to have a multiple-modem subsystem in Atkinson et al's multiple application switching platform as an enhanced modem switching system (Atkinson et al. column 1 lines 21-30, column 6 lines 1-10).

Regarding claims 23 & 24, Atkinson et al. do not specify the modem resources comprising a DSP or a circuit card. Browning et al. teach that modem comprises DSP (58 FIG.5) and can be implemented in a circuit card (27 FIG.1). At the time of the invention, it would have been obvious to one of ordinary skill in the art to utilize the well known technique to have the modem resource comprising a DSP/circuit card in the Atkinson et al.'s modem switching system to have an efficient and up-to-date hardware.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson et al. (U.S. Patent 6381239 B1) in view of McHale et al. (U.S. Patent 6385203 B2).

Atkinson et al. teach that the each connection is transferred to the idle port via the time slot assignment in the TDM (column 14 lines 46-52) and each port assigned to a resource card, but not specify the way to direct the connection from the original assigned resource to another. McHale et al. teach the means to transfer a connection to an available (the idle one) modem in the modem pool (column 2 lines 15-21); an active table (FIG.7) in controller (80 FIG.2), and the method of the connection to an unused modem (step 332 FIG.8). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have the active table in the state memory accessed by resource controller, and the method of coupling the idle resource to the directed connection in the resource controller taught by McHale et al. to provide management and monitoring of the data services/status (column 2 lines 47-49).

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson et al. (U.S. Patent 6381239 B1) in view of Timm et al. (U.S. Patent 6055268).

Atkinson et al. do not specify that the detail of the transferring to distribute multiple data

connections to multiple data handling resources. Timm et al. teach that multiple modems can be simultaneously implemented in a single DSP hardware device (column 16 lines 57-64). At the time of the invention, it would have been obvious to one of ordinary skill in the art to implement multiple modems (data-handling resource) in the APP PROC of Atkinson et al.'s card 2 to reduce overall system cost (column 16 lines 64-66) and achieve the requirement cited in the claim that the active data-handling resource (card 2 with multiple modems) can receive multiple simultaneous data connections and the transferring step can distributing the multiple data connections to multiple data handling resources (modems implemented in the card 2).

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Yeh whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4800.

Edith Yeh
April 16, 2003

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